

LAKE: TOGUS P (VLMP 11)
 TOWN: AUGUSTA
 COUNTY: KENNEBEC

MIDAS: 9931
 TRUE BASIN: 1
 SAMPLE STATION: 1

WHOLE LAKE INFORMATION

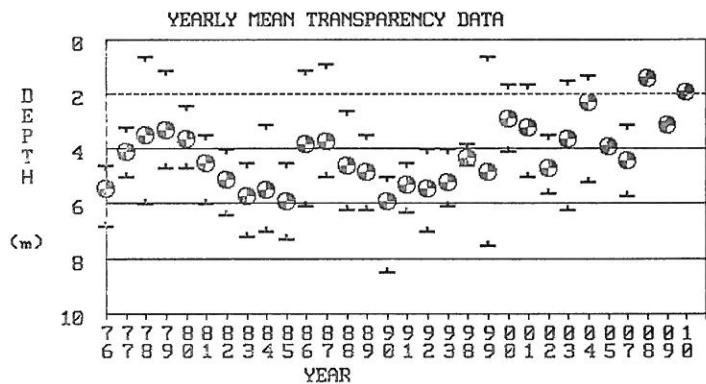
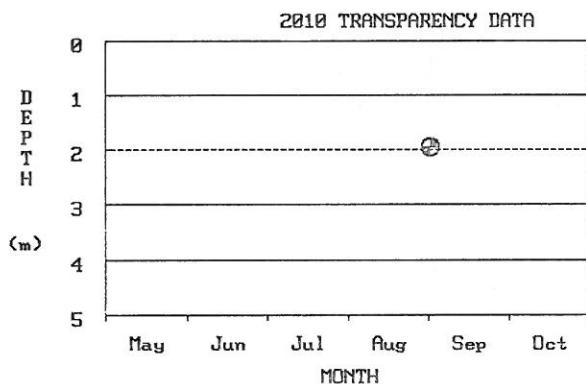
MAX. DEPTH: 15 m. (49 ft.)
 MEAN DEPTH: 6 m. (20 ft.)
 DELORME ATLAS #: 13
 USGS QUAD: TOGUS POND
 IFW REGION B: Belgrade Lakes (Augusta)
 IFW FISH. MANAGEMENT: Warmwater & Coldwater

TRUE BASIN CHARACTERISTICS

SURFACE AREA: 260.0 ha. (642.5 a.)
 FLUSHING RATE: 0.81 flushes/yr.
 VOLUME: 13909671.0 cu. m. (11283 ac.-ft.)
 DIRECT DRAINAGE AREA: 8.84 sq. km. (3.41 sq. mi.)

PLEASE NOTE THE FOLLOWING: The SAMPLE STATION # refers to the location sampled. The term TRUE BASIN is used to define areas within a lake that are separated by shallow reefs or shoals and therefore function as separate lakes. There are approximately 50 lakes in the state that have more than 1 True Basin. True Basin Characteristics are now being included in the first section of these reports to enable users of the Phosphorous Loading Methodology to better evaluate the data. If there is no data for a particular True Basin, True Basin Characteristics must be obtained from the DEP. TOGUS P has 1 True Basin(s).

SECCHI DISK TRANSPARENCY GRAPHS:



Note: 2010 graphs may indicate multiple readings taken on a given day.

SUMMARY OF CHEMICAL AND TROPHIC STATE PARAMETERS:

[* indicates that Secchi disk was visible at bottom of lake (or one reading used in calculation was visible)].

YEAR	MEAN COLOR (SPU)	MEAN pH	MEAN ALK (mg/l)	MEAN COND. (µS/cm)	TOTAL PHOS. MEANS (ppb)				SECCHI DISK (m.)				CHLOROPHYLL A(ppb)			TROPHIC STATE INDICES			
					CORE	GRAB	GRAB	GRAB	MIN.	MEAN	MAX.	N	MIN.	MEAN	MAX.	C	G	SEC	CHL
1976	-	-	-	-	14	-	-	-	4.6	5.4	6.8	6	1.9	3.2	4.7	50	-	44	41
1977	15	6.90	10.0	50	11	-	14	13	3.2	4.1	5.0	2	3.3	7.3	11.2	-	-	-	-
1978	23	6.42	8.0	64	17	15	-	-	0.6	3.5	6.0	6	2.8	8.0	36.7	57	-	68	66
1979	20	6.89	12.4	37	21	-	79	46	1.1	3.3	4.7	6	4.3	12.1	34.5	-	84	71	77
1980	22	6.63	12.7	52	22	14	99	52	2.4	3.6	4.7	6	5.9	8.7	13.9	-	88	66	68
1981	15	6.50	9.0	60	-	-	58	32	3.5	4.5	6.0	5	3.5	4.4	5.6	-	-	54	-
1982	15	6.90	8.0	55	-	-	-	-	4.0	5.1	6.4	5	3.2	3.3	3.3	-	-	47	-
1983	-	-	-	-	-	-	-	-	4.5	5.7	7.2	5	-	-	-	-	-	42	-
1984	-	-	-	-	-	-	-	-	3.1	5.5	7.0	5	-	-	-	-	-	43	-
1985	-	-	-	-	-	-	-	-	4.5	5.9	7.3	3	-	-	-	-	-	-	-
1986	15	6.90	9.0	53	14	-	100	-	1.1	3.8	6.1	5	-	-	-	-	-	63	-
1987	15	7.00	9.0	39	-	-	142	62	0.9	3.7	5.0	6	6.1	15.3	29.0	-	-	65	-
1988	-	-	-	-	-	-	75	41	2.6	4.6	6.2	6	2.9	6.4	10.5	-	81	53	-
1989	-	-	-	-	-	-	35	21	3.5	4.8	6.2	4	4.0	6.9	10.1	-	-	-	-
1990	-	7.05	10.5	50	-	-	63	29	5.0	5.9	8.5	6	3.5	4.8	6.4	-	-	40	-

LAKE: TOGUS P (VLMP 11)
TOWN: AUGUSTA
COUNTY: KENNEBEC

MIDAS: 9931
*TRUE BASIN: 1
*SAMPLE STATION: 1

SUMMARY OF CHEMICAL AND TROPHIC STATE PARAMETERS:

YEAR	MEAN	MEAN	MEAN	MEAN	COND. (uS/cm)	TOTAL PHOS. (mg/l)	MEANS (ppb)	SECCHI D _T SK (m.)				CHLOROPHYLL A(ppb)			TROPHIC STATE INDICES				
	COLOR (SPU)	pH	ALK (mg/l)	EPI				MIN.	MEAN	MAX.	N	MIN.	MEAN	MAX.	EPI PHOS		SEC	CHL	
				/cm)	CORE	GRAB	GRAB	GRAB							C	G	SEC	CHL	
1991	-	-	-	-	18	-	112	46	4.5	5.3	6.3	6	3.5	6.9	11.5	-	-	45	-
1992	-	-	-	-	12	-	14	18	4.0	5.4	7.0	6	1.8	1.8	1.8	-	-	44	-
1993	-	-	-	-	-	-	-	-	4.0	5.2	6.1	6	-	-	-	-	-	46	-
1998	10	-	12.0	50	16	-	56	-	3.8	4.3	4.6	3	8.8	8.8	8.8	-	-	-	-
1999	-	-	-	-	-	-	49	32	0.6	4.8	7.5	5	9.4	9.4	9.4	-	73	50	-
2000	19	-	12.0	55	19	-	59	-	1.6	2.9	4.1	6	10.0	13.5	17.0	-	-	78	-
2001	21	7.31	11.0	54	14	-	27	-	1.6	3.2	5.0	4	5.0	7.1	9.1	-	-	-	-
2002	17	-	13.0	57	10	-	47	-	3.5	4.7	5.6	4	5.1	5.1	5.1	-	-	-	-
2003	17	-	13.0	58	16	-	57	27	1.5	3.6	6.2	6	3.0	13.3	27.0	54	69	66	-
2004	19	-	14.4	66	21	-	156	69	1.3	2.3	5.2	5	2.2	24.5	38.9	61	-	92	-
2005	34	7.31	9.5	62	18	-	160	-	3.9	3.9	3.9	1	12.0	12.0	12.0	-	-	-	-
2007	-	-	-	-	13	-	230	-	3.1	4.4	5.7	4	3.5	3.5	3.5	-	-	-	-
2008	-	-	-	-	20	-	270	-	1.4	1.4	1.4	1	28.0	28.0	28.0	-	-	-	-
2009	-	-	-	-	23	-	79	-	3.0	3.1	3.1	1	25.0	25.0	25.0	-	-	-	-
2010	-	-	-	-	18	-	-	-	1.9	1.9	1.9	1	21.0	21.0	21.0	-	-	-	-
SUMMARY:	18	6.81	10.8	54	17	15	90	38	0.6	4.2	8.5	30	1.8	10.4	38.9	55	79	57	63

LATE SUMMER TEMPERATURE / DISSOLVED OXYGEN PROFILES:

WATER QUALITY SUMMARY

TOGUS (Worromontogus) Pond, Augusta

Midas: 9931, Sample Station # 1

The Maine Department of Environmental Protection (Maine DEP) and the Volunteer Lake Monitoring Program (Maine VLMP) have collaborated in the collection of lake data to evaluate present water quality, track algal blooms, and determine historical water quality trends. This dataset does not include bacteria, mercury, or nutrients other than total phosphorus.

Water quality monitoring data for Togus Pond has been collected since 1976. During this period, 18 years of basic chemical information was collected, along with 26 years of Secchi Disk Transparency (SDT) measures (continuous from 1976-93 and 1998-05, no water quality records 1994-97). In summary, the water quality of Togus Pond is below average, based on measures of SDT, total phosphorus (TP), and chlorophyll-a (Chla). The potential for nuisance summertime algal blooms on Togus Pond is moderate to high.

Water Quality Measures: Togus Pond is a non-colored lake (average color 18 SPU) with an average SDT of 4.4 meters (14.4 feet). The range of upper water column TP for Togus Pond is 10 to 22 parts per billion (ppb) with an average of 16 ppb, while Chla ranges from 1.8 to 38.9 ppb with an average of 8.7 ppb. Recent dissolved oxygen (DO) profiles show moderate to high DO depletion in deep areas of the lake. The potential for TP to leave the bottom sediments and become available to algae in the water column (internal recycling) is moderate to high.

Comments: Maine DIF&W (Region B) manages Togus Pond as a mixed warmwater-coldwater fishery. Oxygen levels below 5 parts per million stress certain cold water fish, and a persistent loss of oxygen may eliminate or reduce habitat for sensitive cold water species.

Nutrient Management: Togus Pond is on the Maine DEP/EPA 2004 303(d) list of waters non-attaining Maine state water quality standards (TMDL List). Togus Pond experienced a severe algal bloom in 1999. Secchi disk transparency has not been this low since 1978. Yearly fluctuations in the water quality of Togus Pond complicates the ability to establish a long-range water quality trend. A Phosphorus Control Action Plan (PCAP) and TMDL study - report was prepared and US-EPA-approved in 2004-2005. This final report, with the EPA-New England review summary/approval letter, can be found on the following Maine DEP webpage: <http://www.maine.gov/dep/blwq/docmonitoring/tmdl2.htm>.

See ME-DEP Explanation of Lake Water Quality Monitoring Report for measured variable explanations. Additional lake information can be found on the Internet at <http://www.lakesofmaine.org/> and/or <http://www.maine.gov/dep/blwq/lake.htm>, or telephone the ME-DEP at 207-287-3901 or the VLMP at 207-783-7733.

Filename: tog19931, Revised: 03/2006, By: dbh